

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 1500603****Date: 17-01-2013****Subject Name: Environmental Engineering****Time: 02:30 pm to 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain different phases of microbial growth and draw a neat sketch of microbial growth. **07**
(b) Enlist different chemical characteristics of water and discuss about acidity with their environmental significance. **07**

- Q.2** (a) What are biodegradable and non biodegradable organics? Differentiate with sketch Ist stage and IInd stage BOD. **07**
(b) Why BOD is determined for 5 days at 20°C. What will be BOD₅ at 20°C if BOD₃ at 35°C is 200 mg/l. $K_{D(20)} = 0.10$. **07**

OR

- (b) How is pH measured? Calculate how much acidic is pH 3 compared to pH of 6. **07**

- Q.3** (a) What do you mean by temporary and permanent hardness? Describe the method of determination of total hardness in the laboratory. **07**
(b) Describe different systems of plumbing with their sketches. **07**

OR

- Q.3** (a) What do you mean by self purification? Explain with the sketch the oxygen sag curve. **07**
(b) Discuss different types of traps used in house drainage system indicating their locations. **07**

- Q.4** (a) Discuss briefly (a) Drainage plan of building (b) Incineration **07**
(b) Describe the all functional elements with flow diagram of solid waste management. **07**

OR

- Q.4** (a) Discuss the composition of municipal solid waste and explain their methods of collection. **07**
Q.4 (b) Discuss the merits and demerits of sanitary land filling and method of composting of solid waste disposal. **07**

- Q.5** (a) What are primary and secondary air pollutants? Discuss the effects of carbon mono oxide on human beings. **07**
(b) Enumerate different air pollution control devices and explain the functioning of cyclone precipitator. **07**

OR

- Q.5** (a) Write short notes on (a) EIA (b) Impurities in water **07**
(b) How is noise measured? Describe the methods of controlling noise pollution. **07**
